

3D printing : the craft of the future?

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3D Printing: The craft of the future?

Professor Paul Atkinson

**Sheffield
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Research activity takes place in four broad domains: creative practices in healthcare; advanced making processes and theory; social, cultural and philosophical narratives; and applied research in digital media. However, our interdisciplinary and operational approach recognises and enables these boundaries to be permeable as evidenced by diverse research and creative practice undertaken by our staff. Researchers in ADRC are involved in the development of new methods and techniques for research and their application in the generation of products, designs and works of art that change our understanding or create new knowledge that adds to social, cultural and economic well-being.

Our research strategy focuses on the origination and generation of ideas and knowledge through practice, reflection and dialogue and its dissemination to other academics, practitioners, end users, commerce and industries. The centre actively supports and develops collaborative clusters to undertake large scale research programmes as well as the continuing support of the lone scholar.

Closely aligned to the ADRC is Design Futures, a discrete unit within CSRI delivering packaging and product design, research and development to industry. Design Futures has a proven track record as innovators being cited as inventors or contributors to a portfolio of intellectual property, it has accrued a number of design awards.

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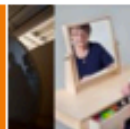
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Background

[TOP](#)

I am an industrial designer, design historian and design educator. I trained initially as a mechanical and production engineer before studying Industrial Design at The University of Teesside. I then worked as an in-house designer, a design manager and as a director of a design consultancy. When I became a design educator I studied the History of Design at Middlesex University. My work on the social history of computing technology eventually led to a PhD from the University of Huddersfield. I have spoken at a number of international conferences around the world about Design History, Design Theory and Design Practice, have written books and had articles published in a number of international design journals.

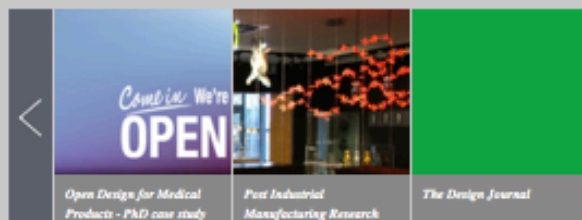
My academic research covers a wide variety of subjects, all concerned in one way or another with the relationship between society and technology. The relationship between people and technological artefacts is explored through my writings on the design history of computers. The impact of the society-technology relationship on the design profession is explored through my writings on professional vs amateur design, including work on the history of DIY and Open Design. The future impact of emerging technologies on the nature of design is explored through my practice-based research into Post Industrial Manufacturing.

PhD Supervision

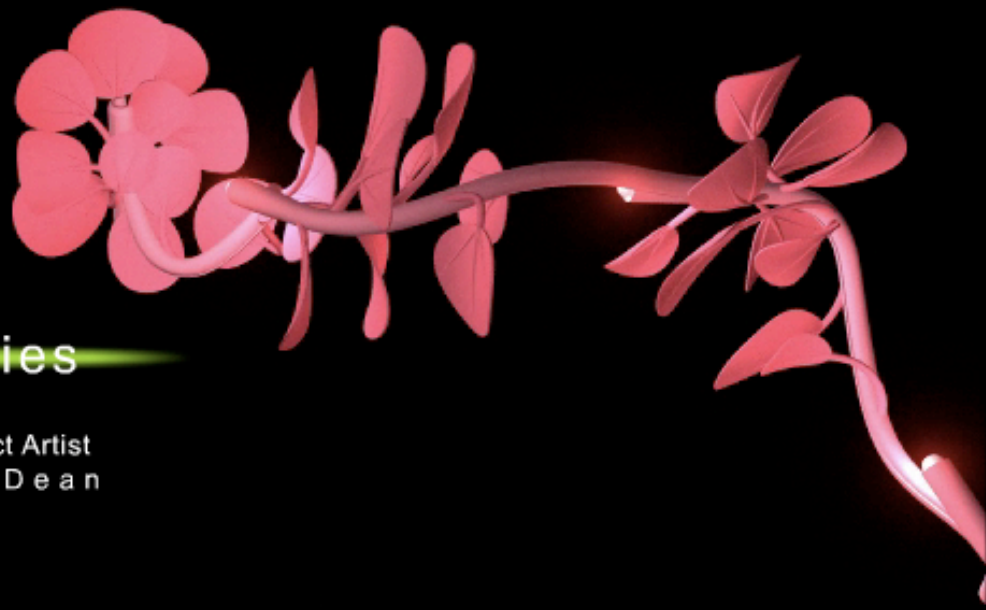
Paul supervises PhD students in design:

[Matthew Dexter](#), [Julia Keyte](#)[Claire Craig](#)

Projects

[TOP](#)Open Design for Medical
Products - PhD case studyPost Industrial
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The Design Journal



FutureFactories

Digital Creativity by Product Artist
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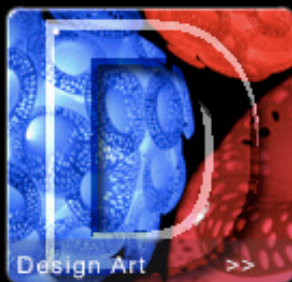
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Art

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Design Art

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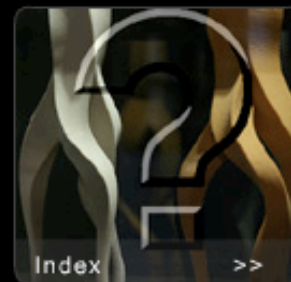
Retail Products

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Shuffle

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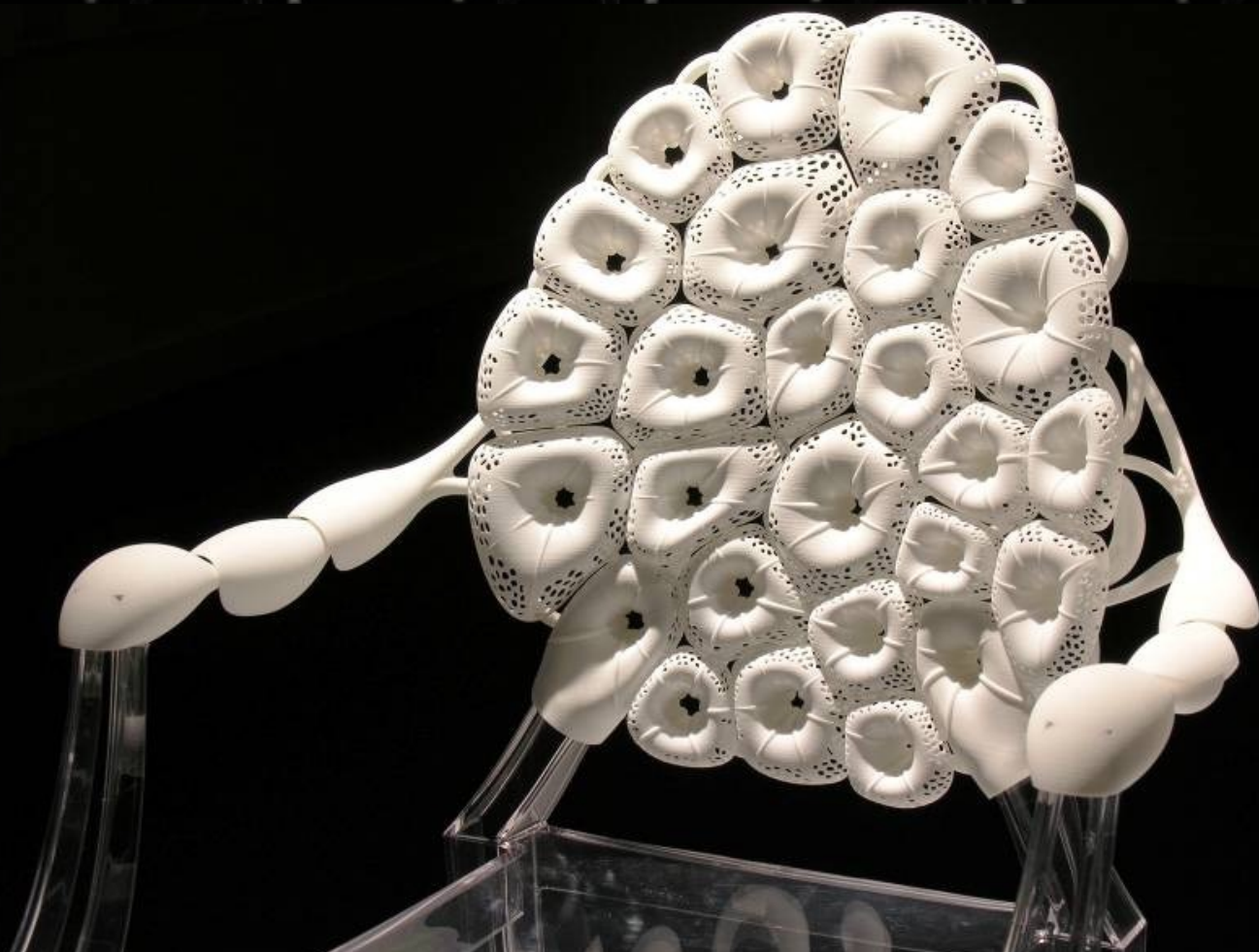


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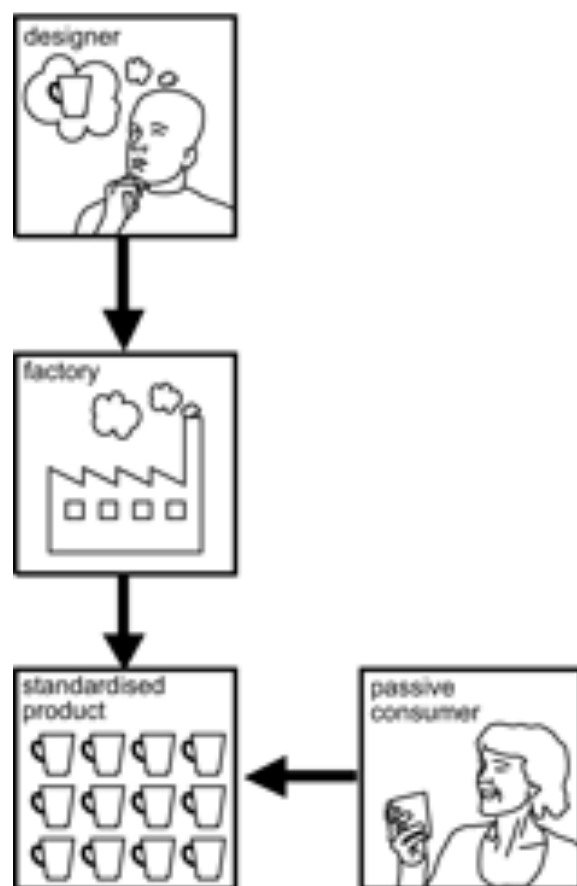


Automake

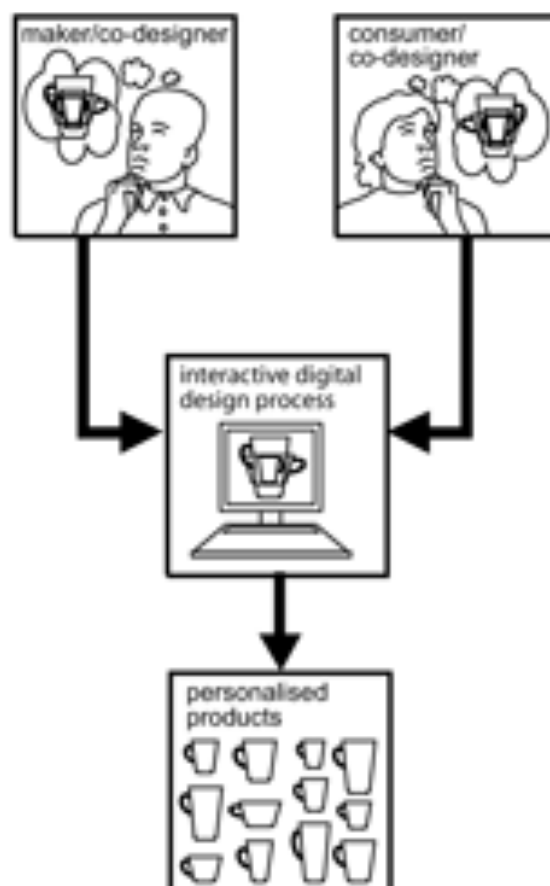
enter

interactive generative
design project

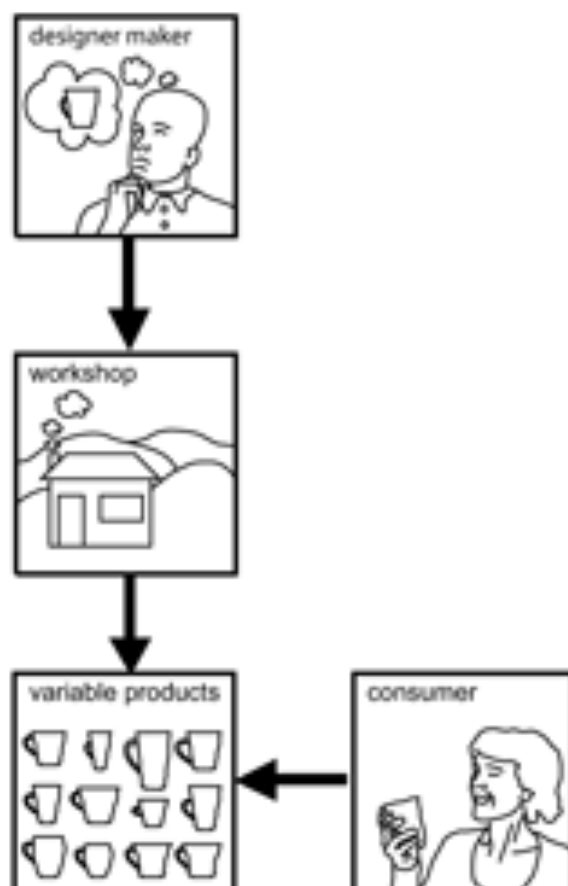
MASS PRODUCTION



AUTOMAKE



CRAFT PRODUCTION



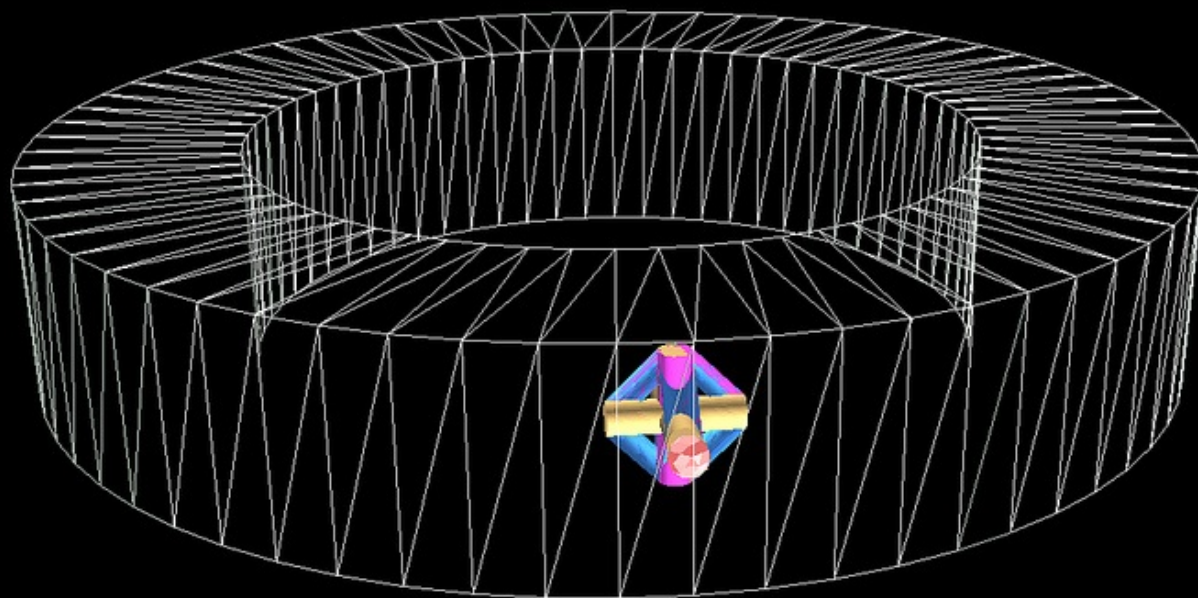
click 1. to deselect
unit, 2. to reselect
unit



START
BUILD

HIDE
MESH

STOP
& SAVE



TWIST

+Y -Y

SCALE

+X -X

+Y -Y

+Z -Z

BEND

+X -X

+Y -Y

+Z -Z

STRETCH

+X -X

+Y -Y

+Z -Z

RESET
MESH

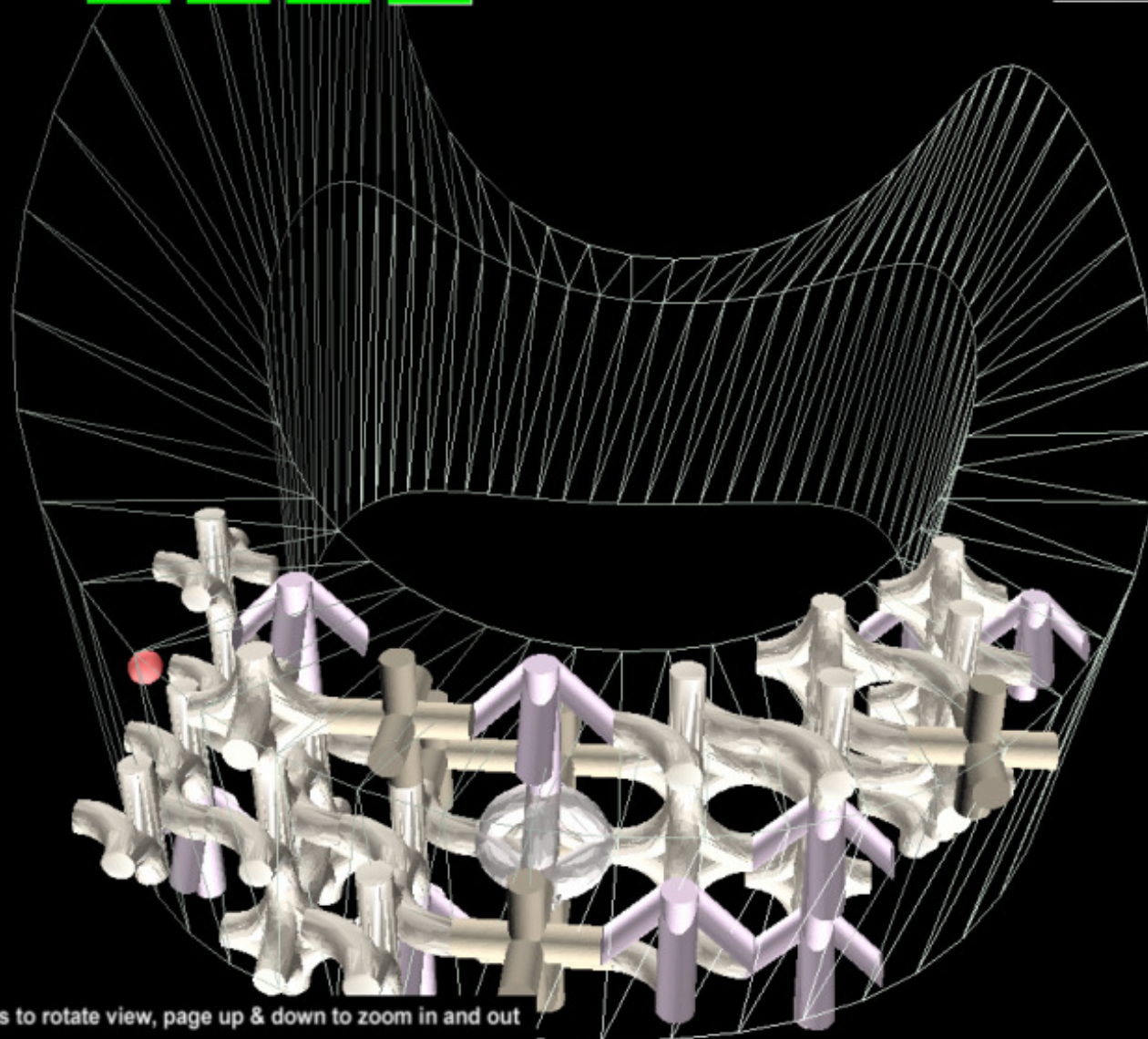
click to deselect unit,
click again to reselect.



START
BUILD

HIDE
MESH

STOP
& SAVE



use arrows keys to rotate view, page up & down to zoom in and out



TWIST

+Y -Y

SCALE

+X -X

+Y -Y

+Z -Z

BEND

+X -X

+Y -Y

+Z -Z

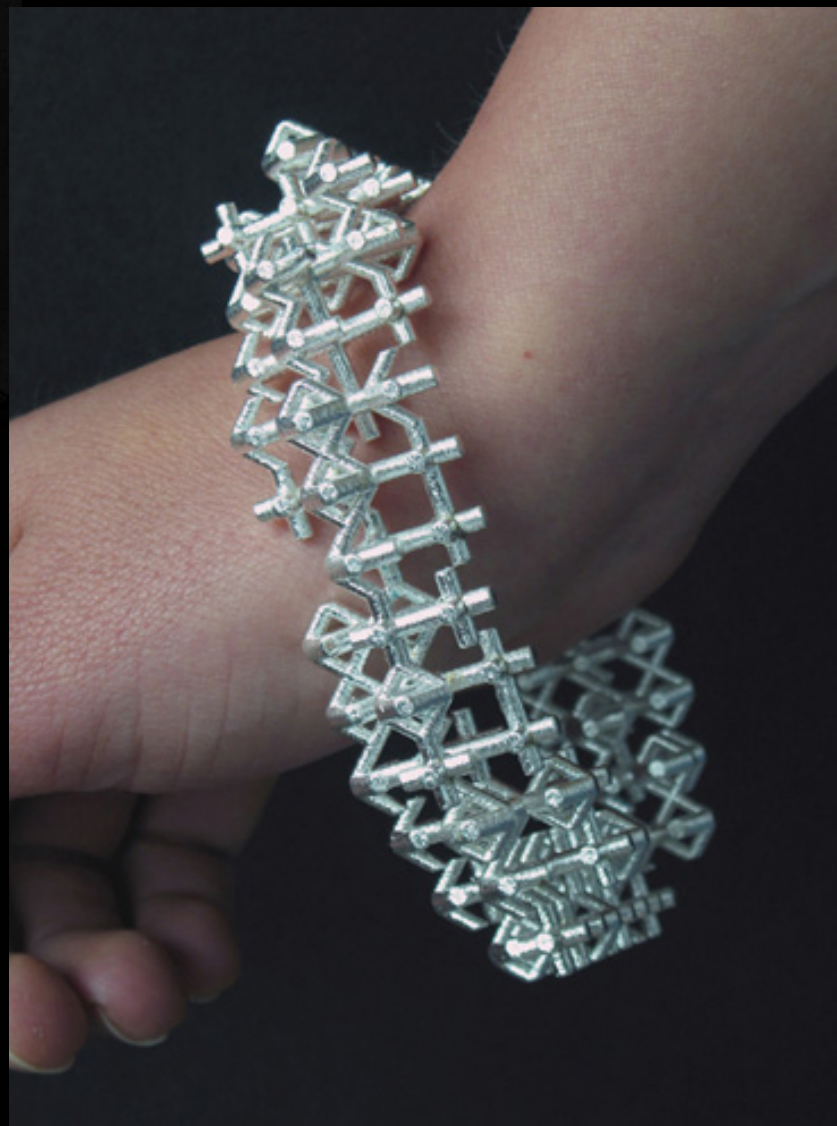
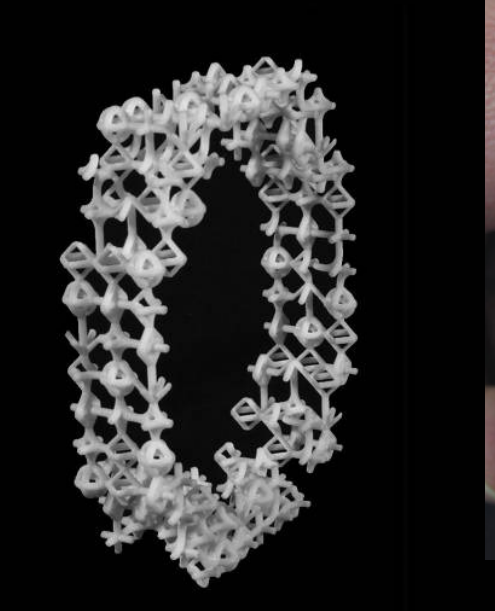
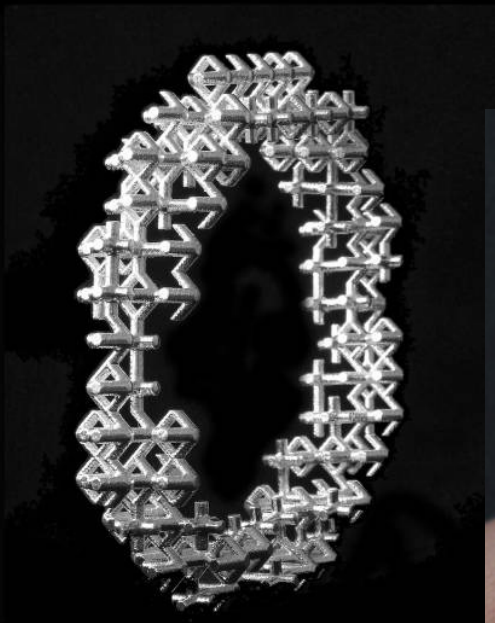
STRETCH

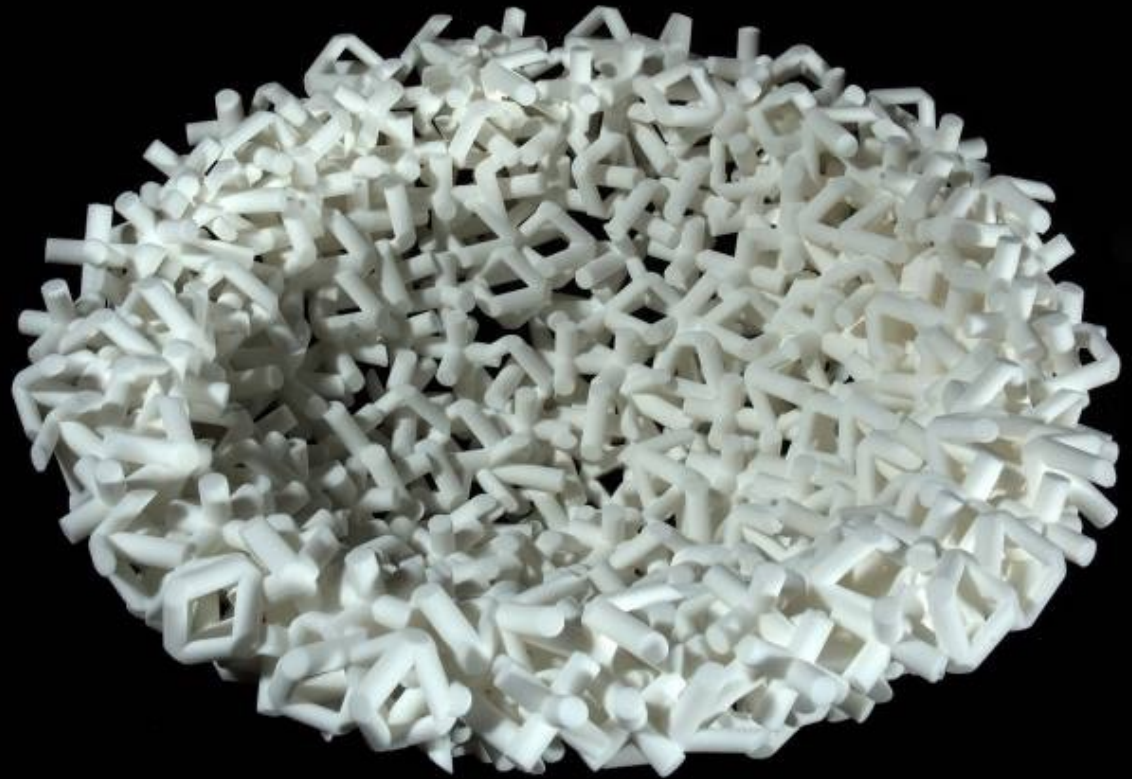
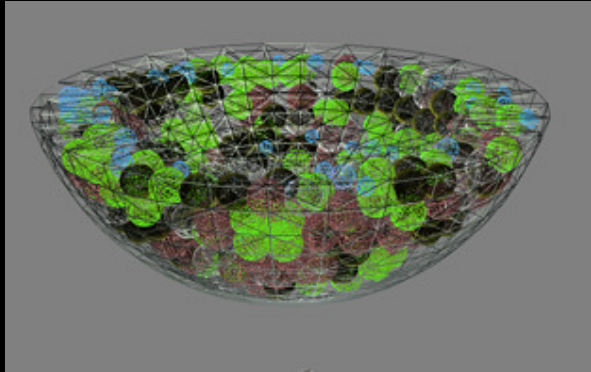
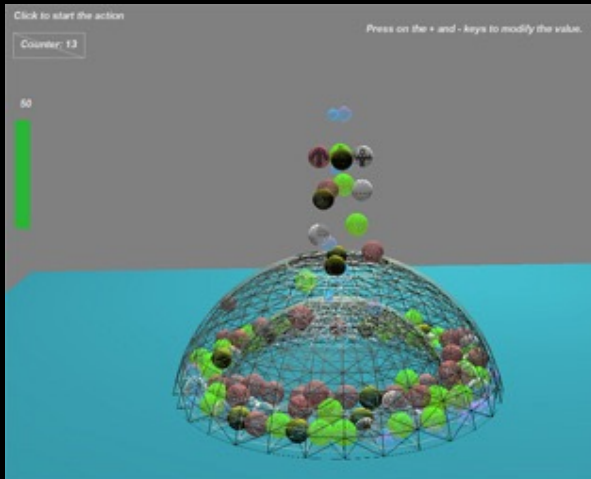
+X -X

+Y -Y

+Z -Z

RESET
MESH





hub

National Centre for Craft & Design

Automake & Future Factories



Automake
FutureFactories

Digital design futures with Justin Marshall and Lionel Dean
On the fourth floor until 8th June

Image credit: Top Left: Random Fill bowl (2008) by Justin Marshall. Bottom Left: Random Fill bowl (2008) by Justin Marshall. Photography by John Marshall.







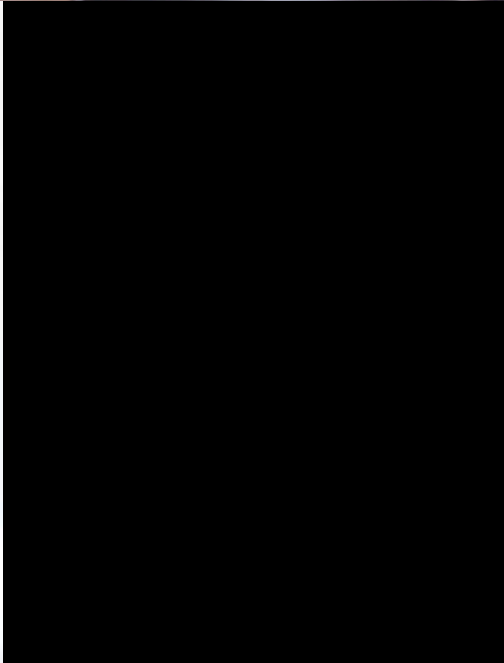
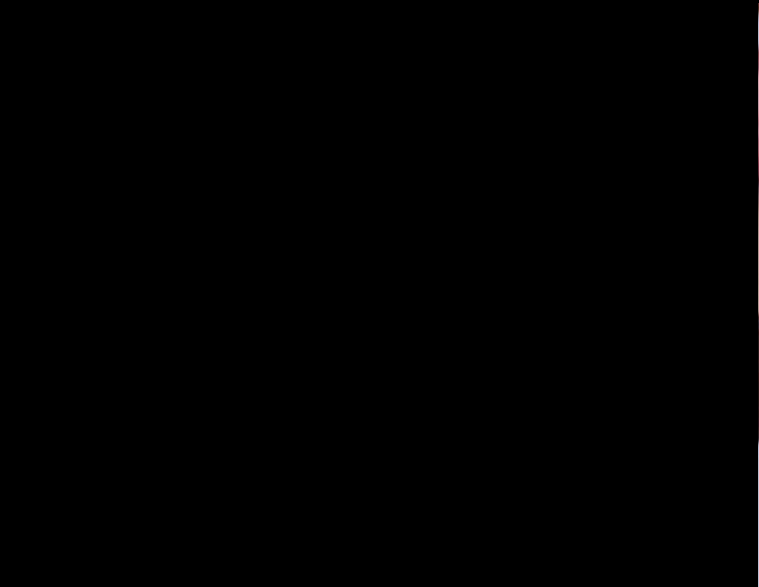
OPEN DESIGN NOW

WITH
VISUAL
INDEX



WHY DESIGN
CANNOT REMAIN
EXCLUSIVE

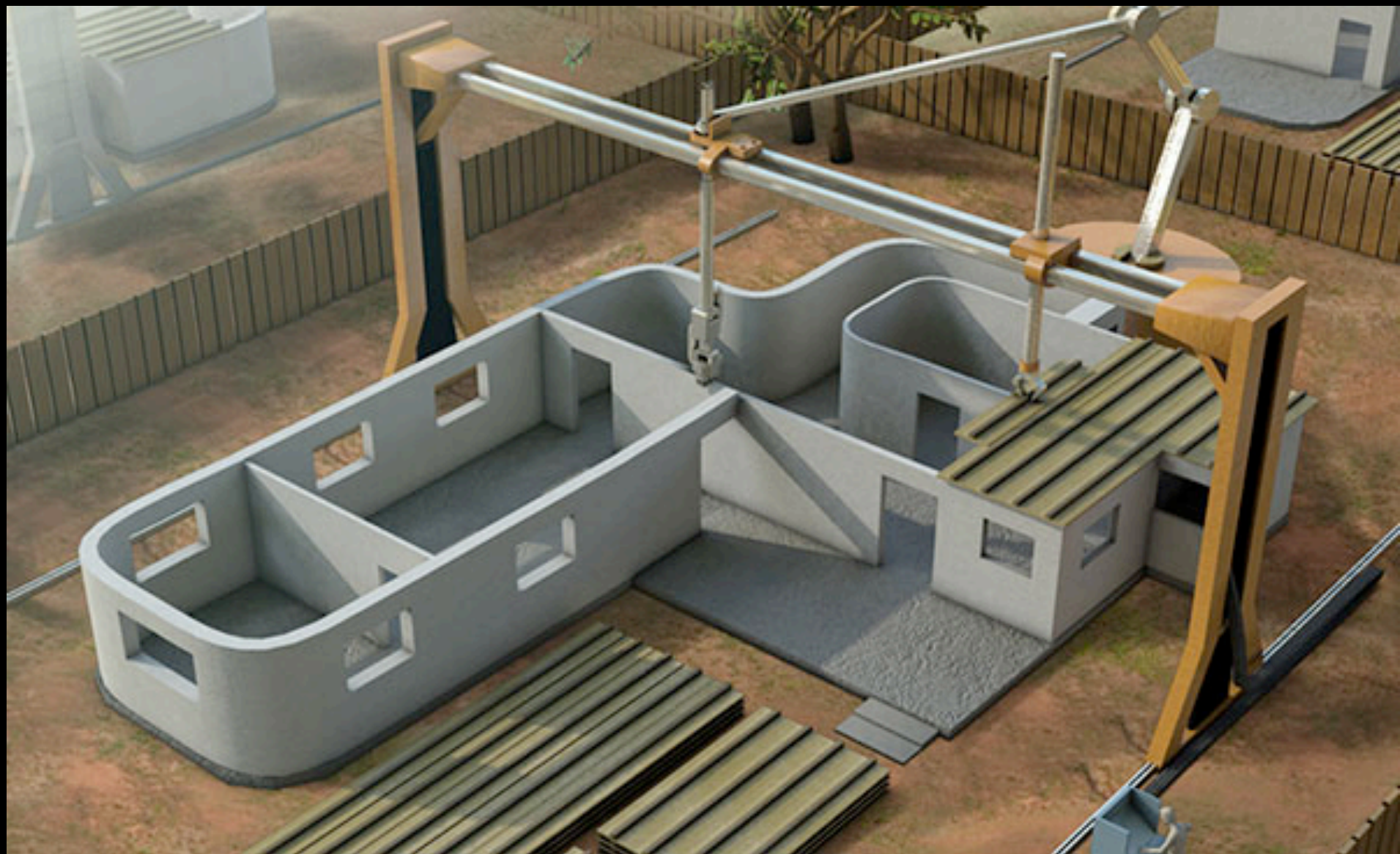
BAS VAN ABEL
LUCAS EVERS
ROEL KLAASSEN
PETER TROXLER

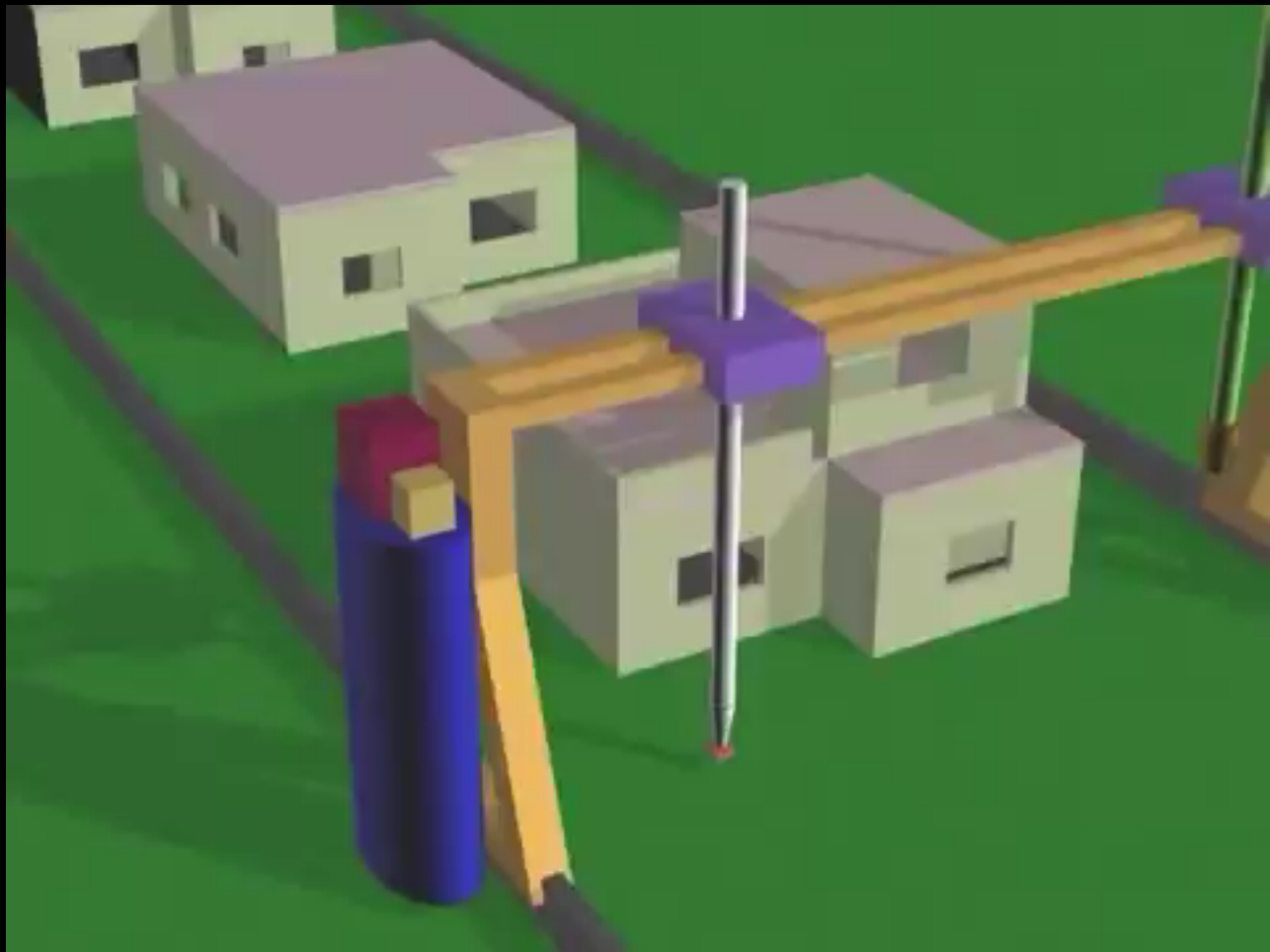






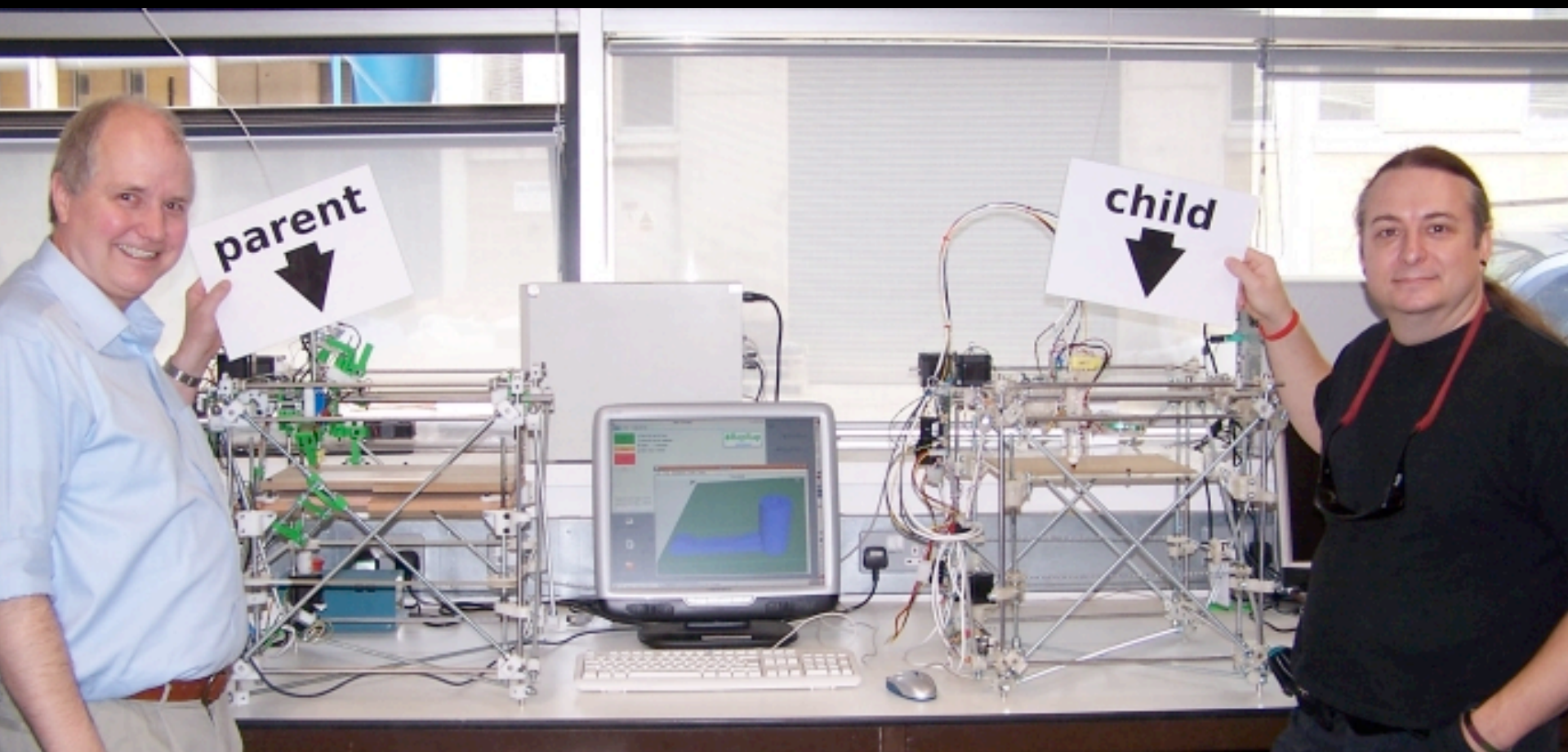


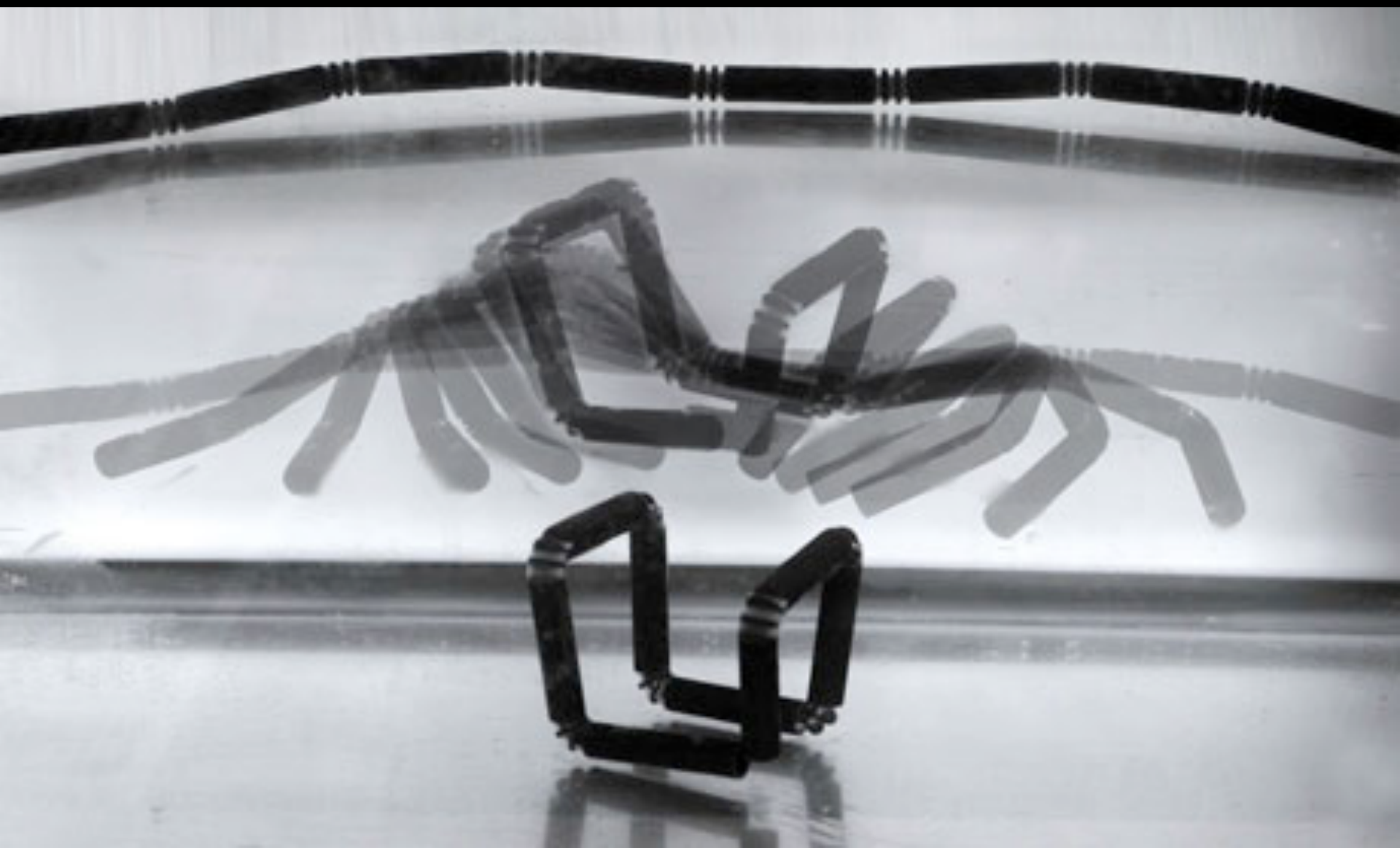














Issues

We are entering a 'Post Professional' era.

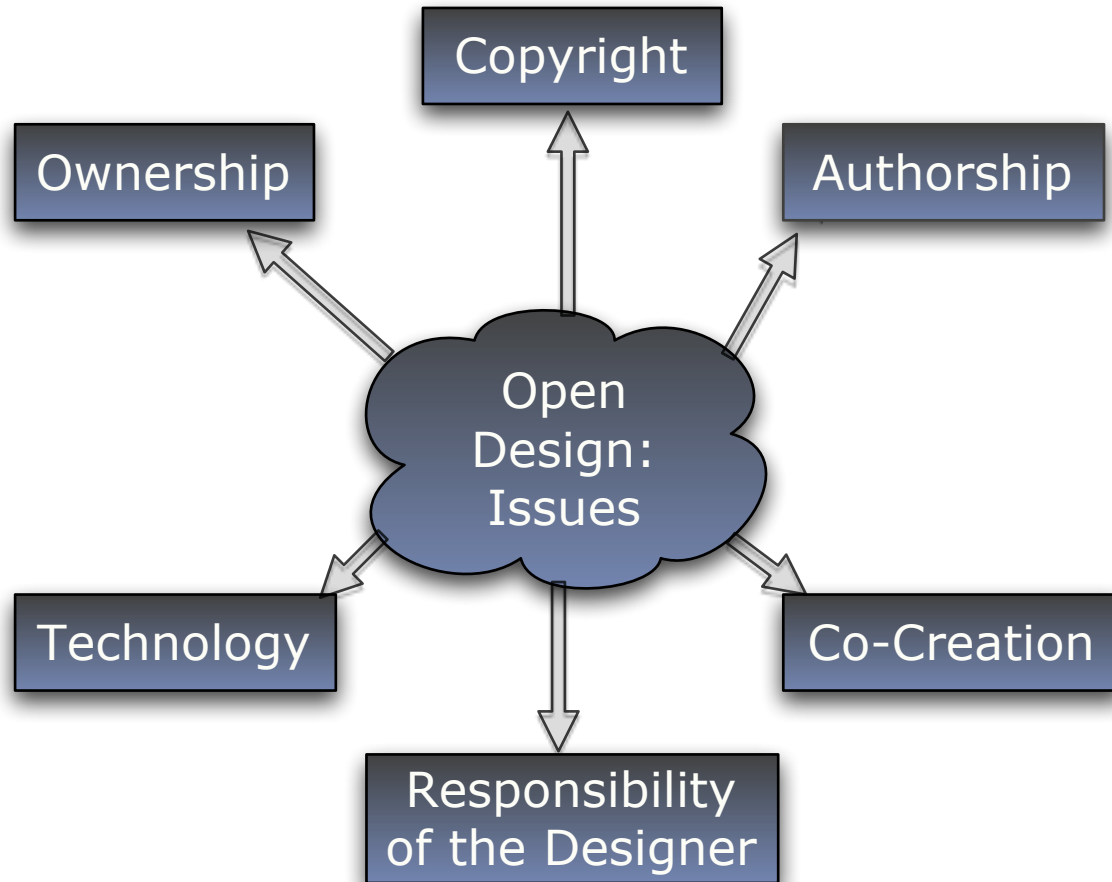
The new norms may be:

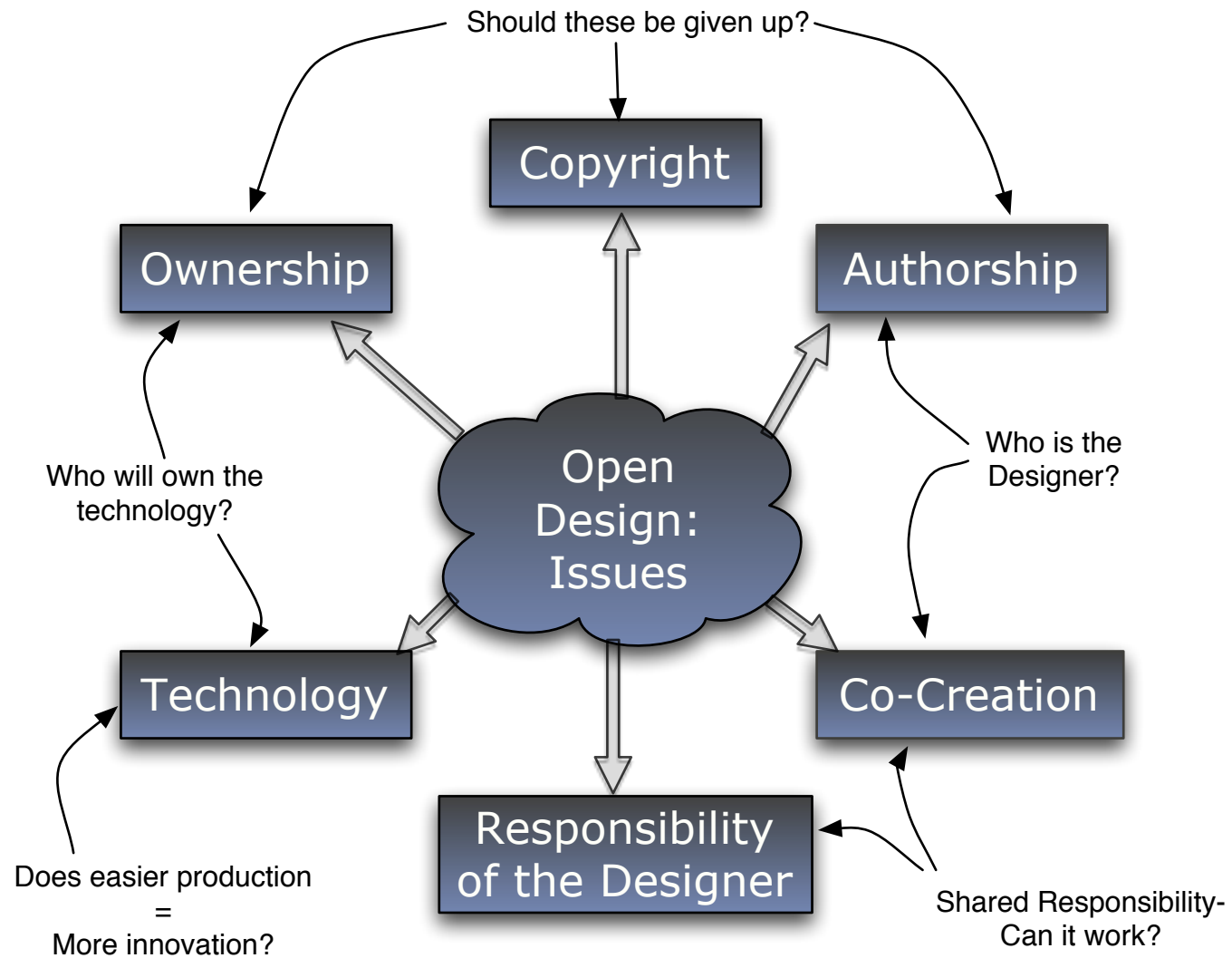
- direct digital manufacturing,

- mass personalisation and

- Open Design

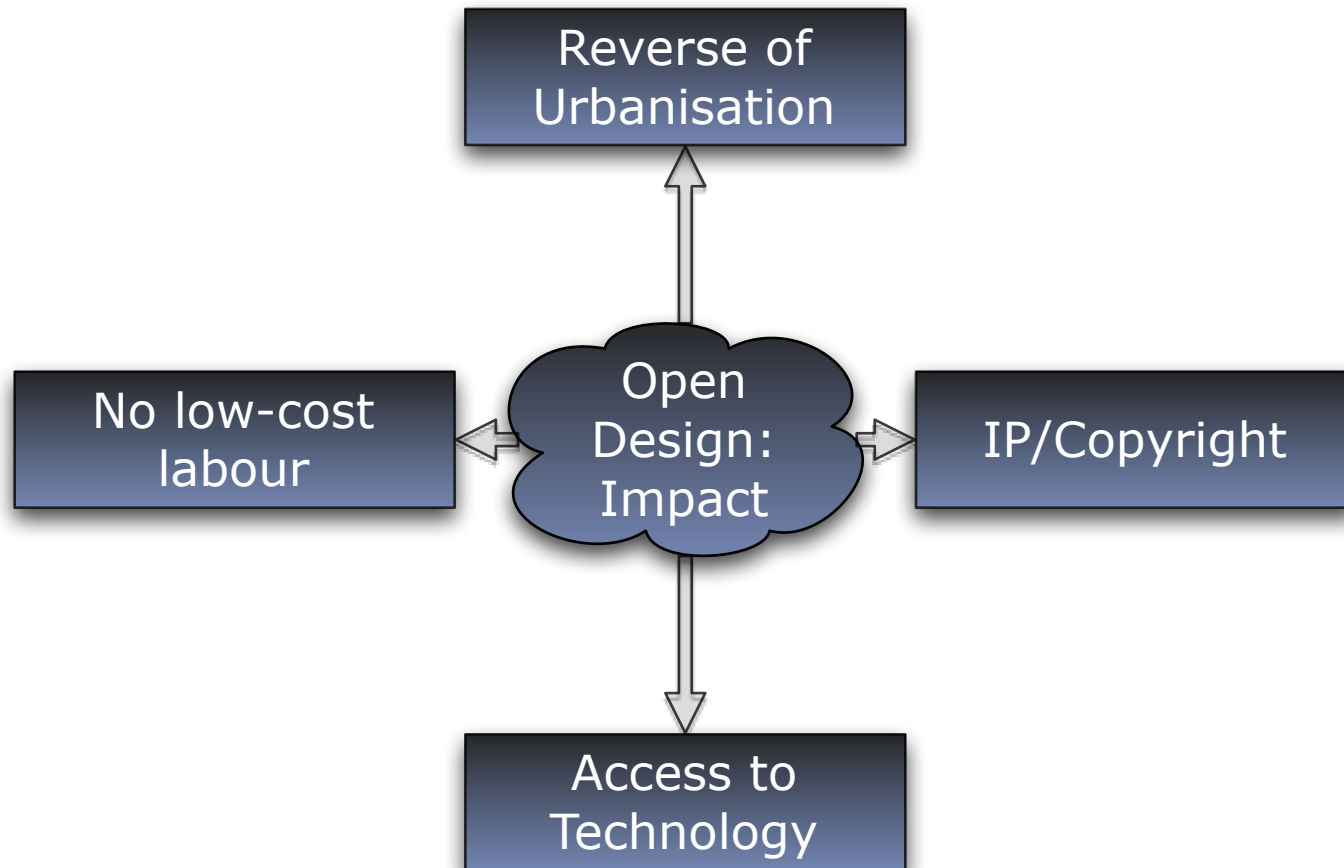
The notion of the professional designer will be called into question, and a number of issues will need to be addressed

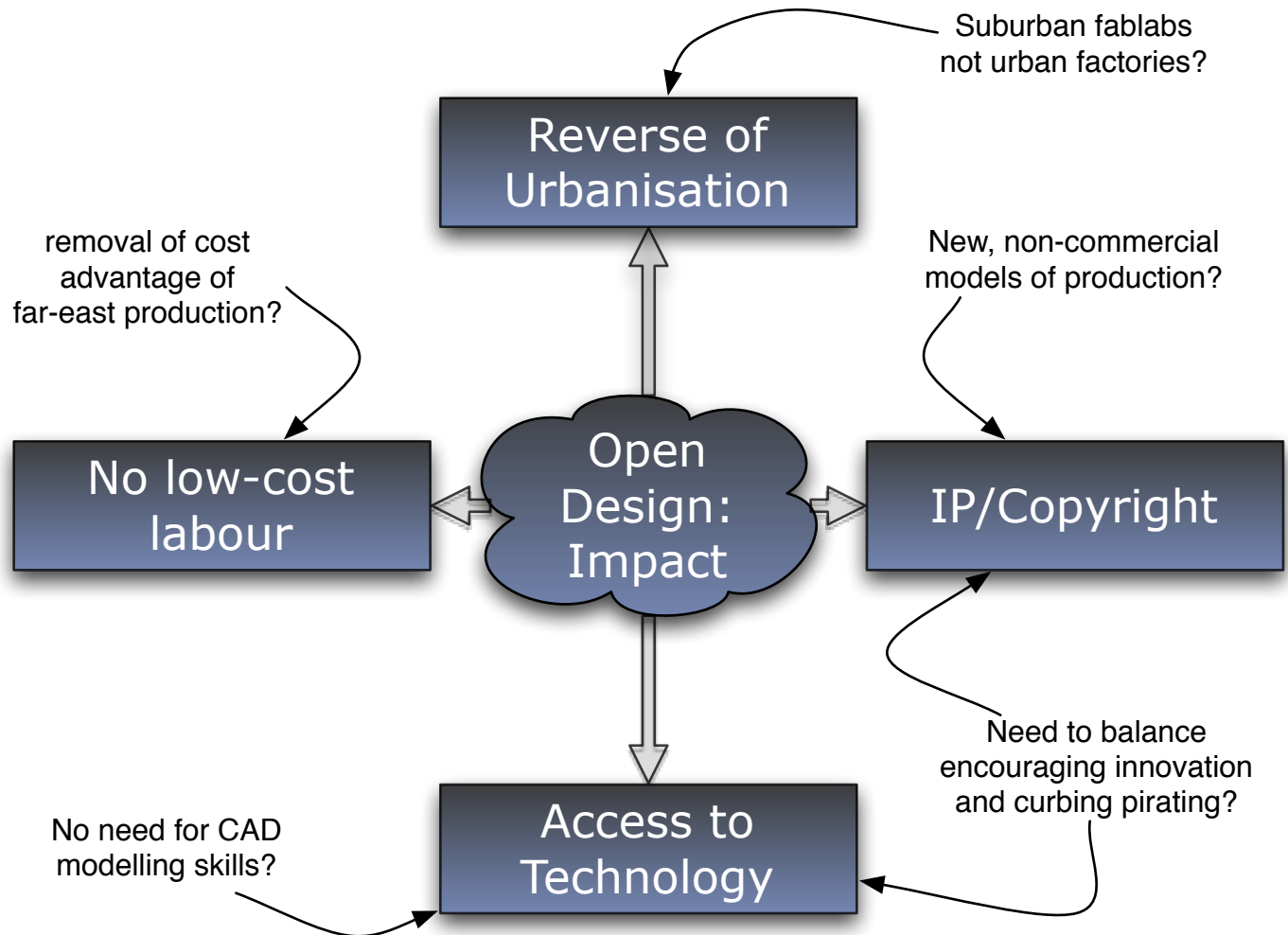




Impact

The potential impact of Direct Digital Manufacturing and Open Design could be more far-reaching than might at first be thought:





Post Industrial Manufacturing

The full potential of emerging technologies in direct digital manufacturing may only be fully realized when allied with Open Design practices

Post Industrial Manufacturing has to be seen as an alternative to Mass Production, and in many ways a return to a more craft-based production ethos

Post Industrial Manufacturing

We cannot accurately predict the future, but there is almost certain to be a sea change in design and manufacturing processes.

In some areas of production, there will be a paradigm shift in approach, in others, the changes may be more subtle and nuanced.

Thank You

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- Further information:

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